Twin Cities Regional Truck Highway Corridor Study

MWCOG / TPB Freight Subcommittee

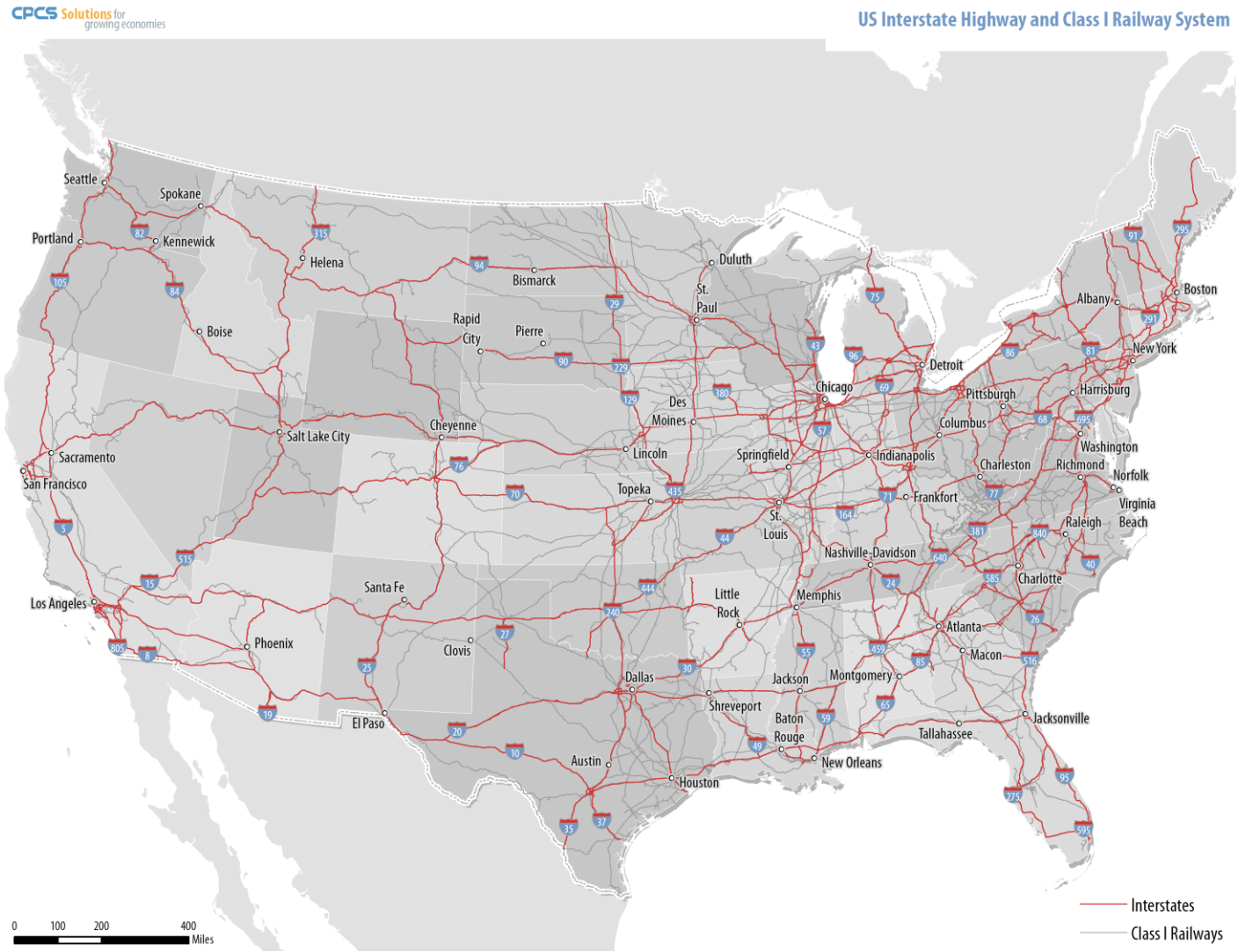
Solutions for growing economies

MWCOG / TPB Freight Subcommittee
July 14, 2016
Washington, DC

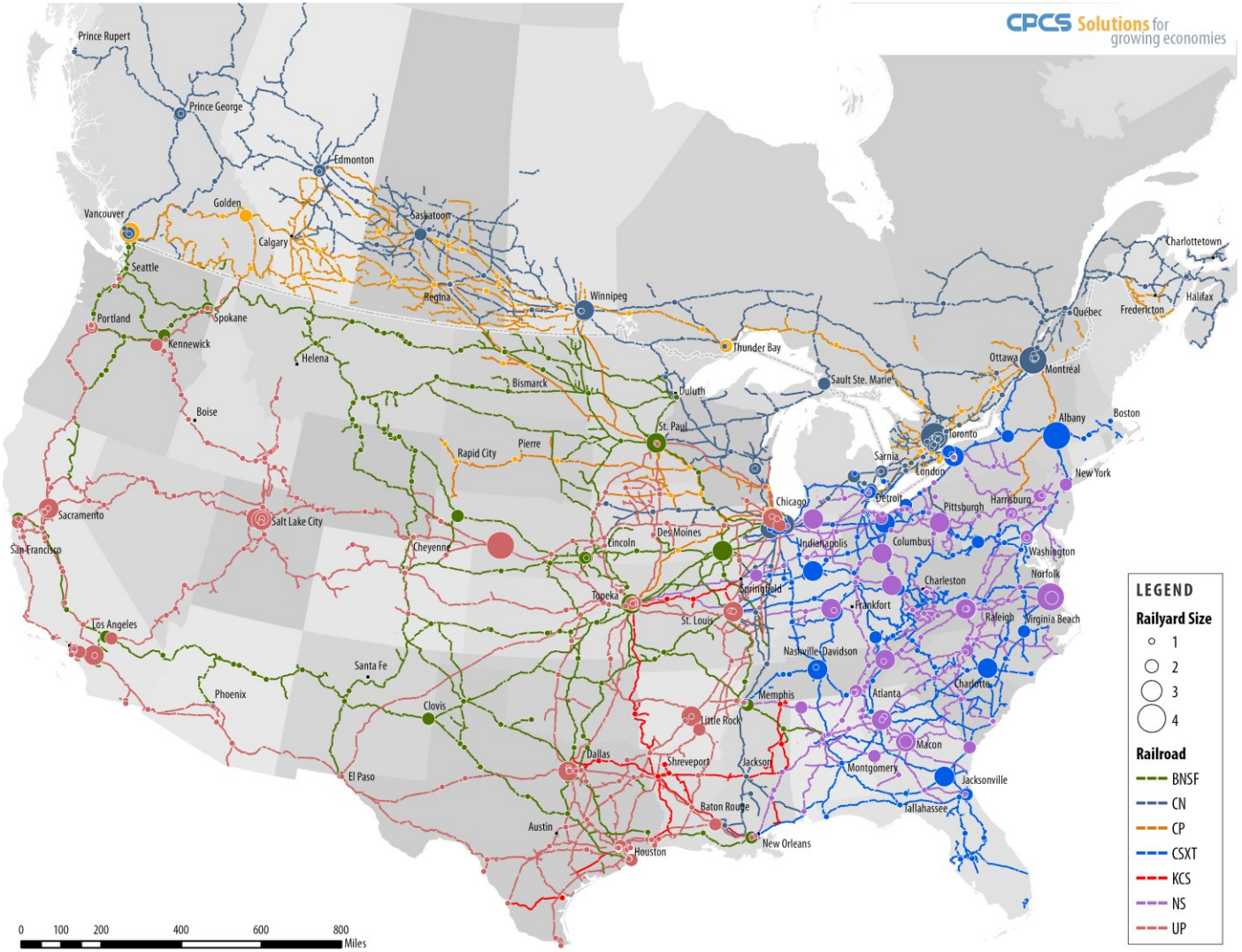
Primer: Met Council Region

- 7 Counties
- Anchored by Minneapolis & St. Paul
- 3 million population
- 3,000 square miles
- 19 Fortune 500 headquarters

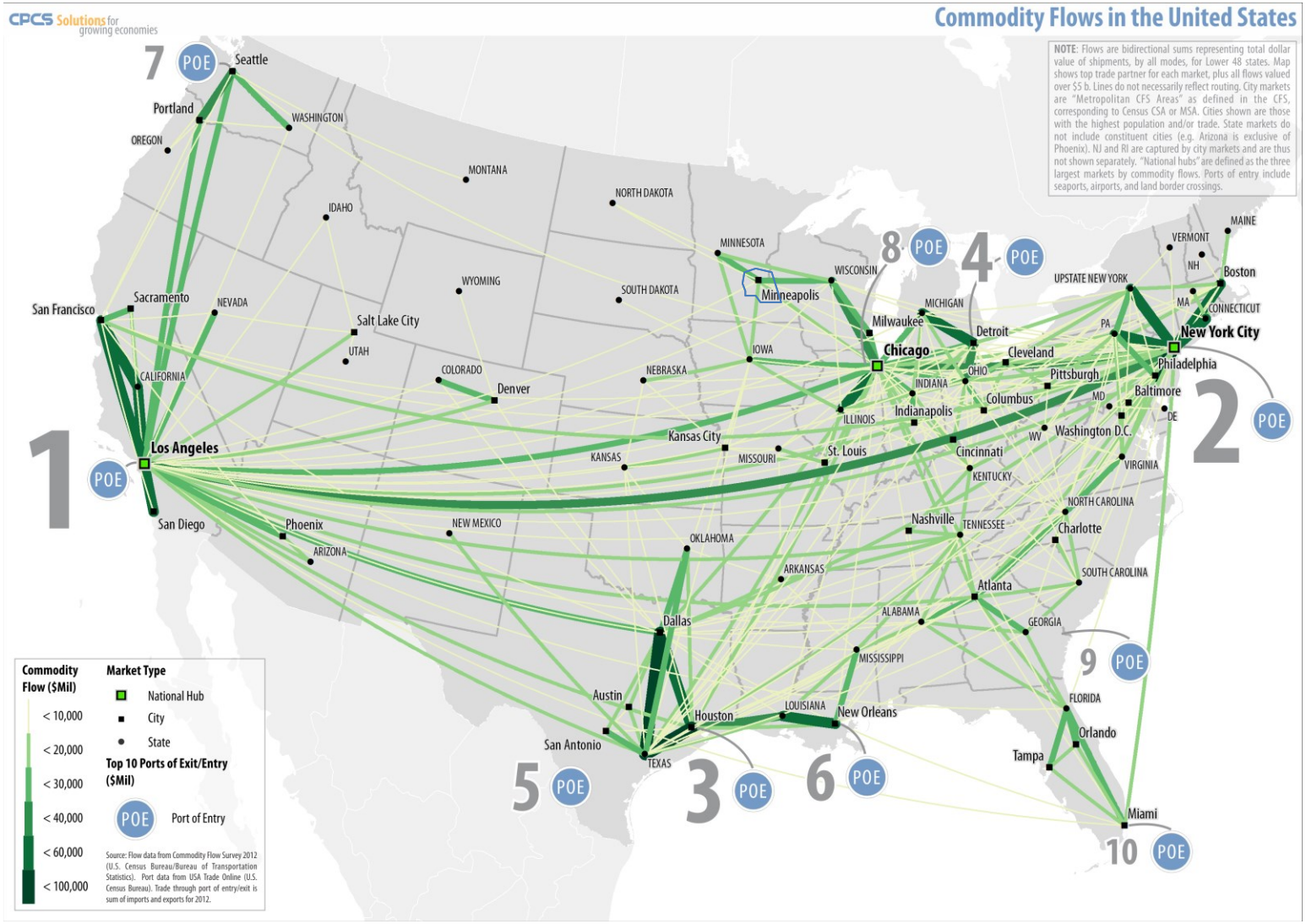
Twin Cities Region: National Highway Network



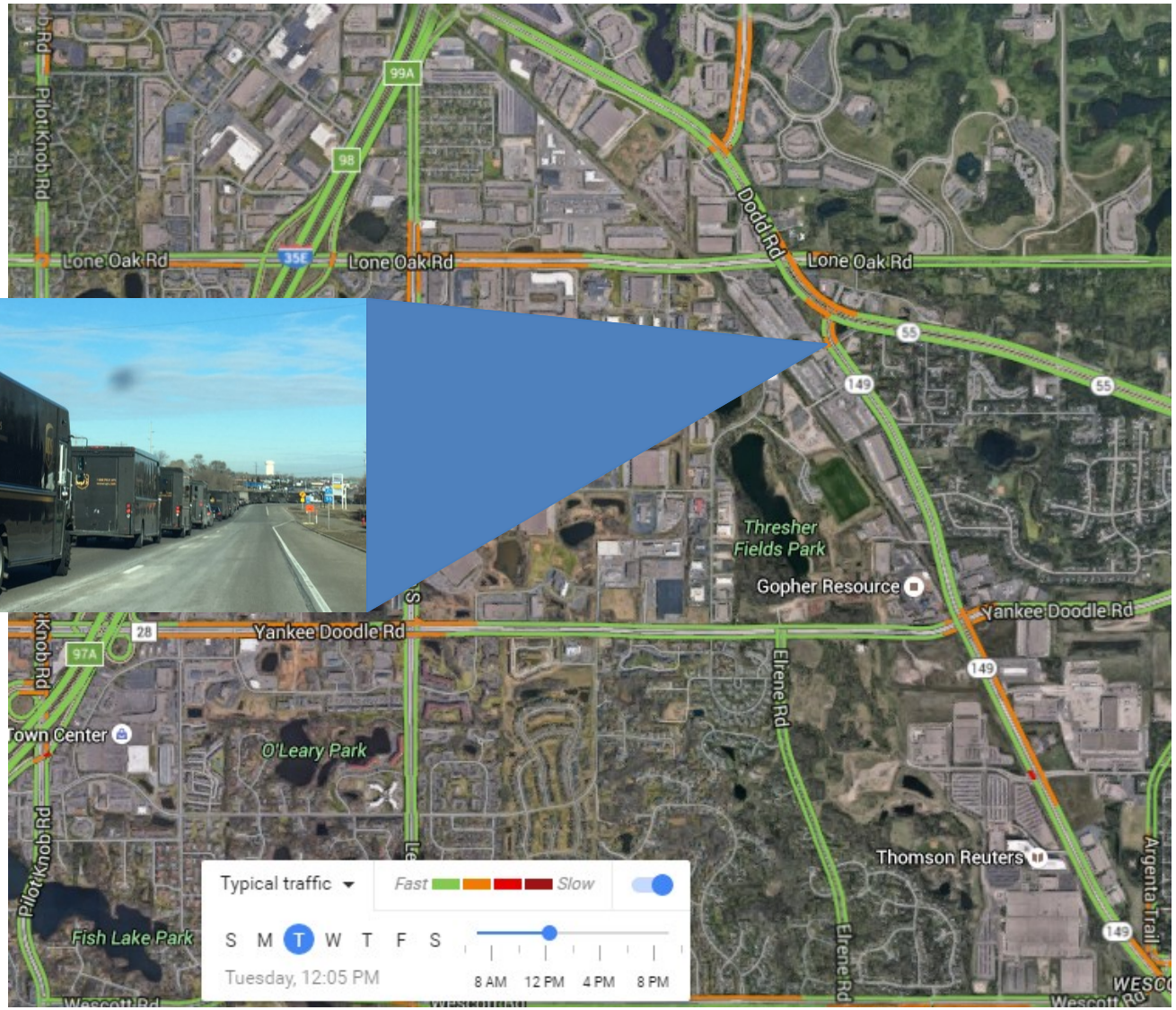
Twin Cities Region: National Rail System



Twin Cities Region: National Freight Context



Freight Clusters and Corridors: Eagan



Solutions for growing economies

Project Background

Why Now?

- Transportation Policy Plan
  - Stated objective:
    "Support the region's economic competitiveness through the efficient movement of freight."
  - Strategy: *"…work with trans. partners to identify impacts of highway congestion on freight & identify cost-effective mitigation."*
- FAST Act Freight Investment Program
  - $6.3 billion National Highway Freight Program
  - $4.5 billion FASTLANE grant program
  - Identify regional highway projects that most benefit trucks

Project Background

Key Study Questions

- What are the key truck corridors?
- What criteria are used to identify and compare corridors?
- How does congestion affect key freight corridors in the region?
- What are the major safety issues or physical constraints along the key corridors?
- How can data & truck corridors be used to better influence regional highway investments to benefit freight?

Project Background

How might the results be used?

- Transportation Policy Plan Update
  - Goals/objectives or action strategies for key truck corridors
  - Performance measures related to key corridors
- Input to development of prioritizing criteria for federal Regional Solicitation funding
- Establishing critical urban and critical rural freight corridors within the metro region as required in FAST Act

Project Background – Progress to Date

- ✓ Document existing and required freight data resources
- ✓ Map key regional freight generators
- * Identification of key truck corridors
- • Identification of constraints and issues on corridors including congestion
- • Recommendations for how study results could be incorporated in regional decision-making

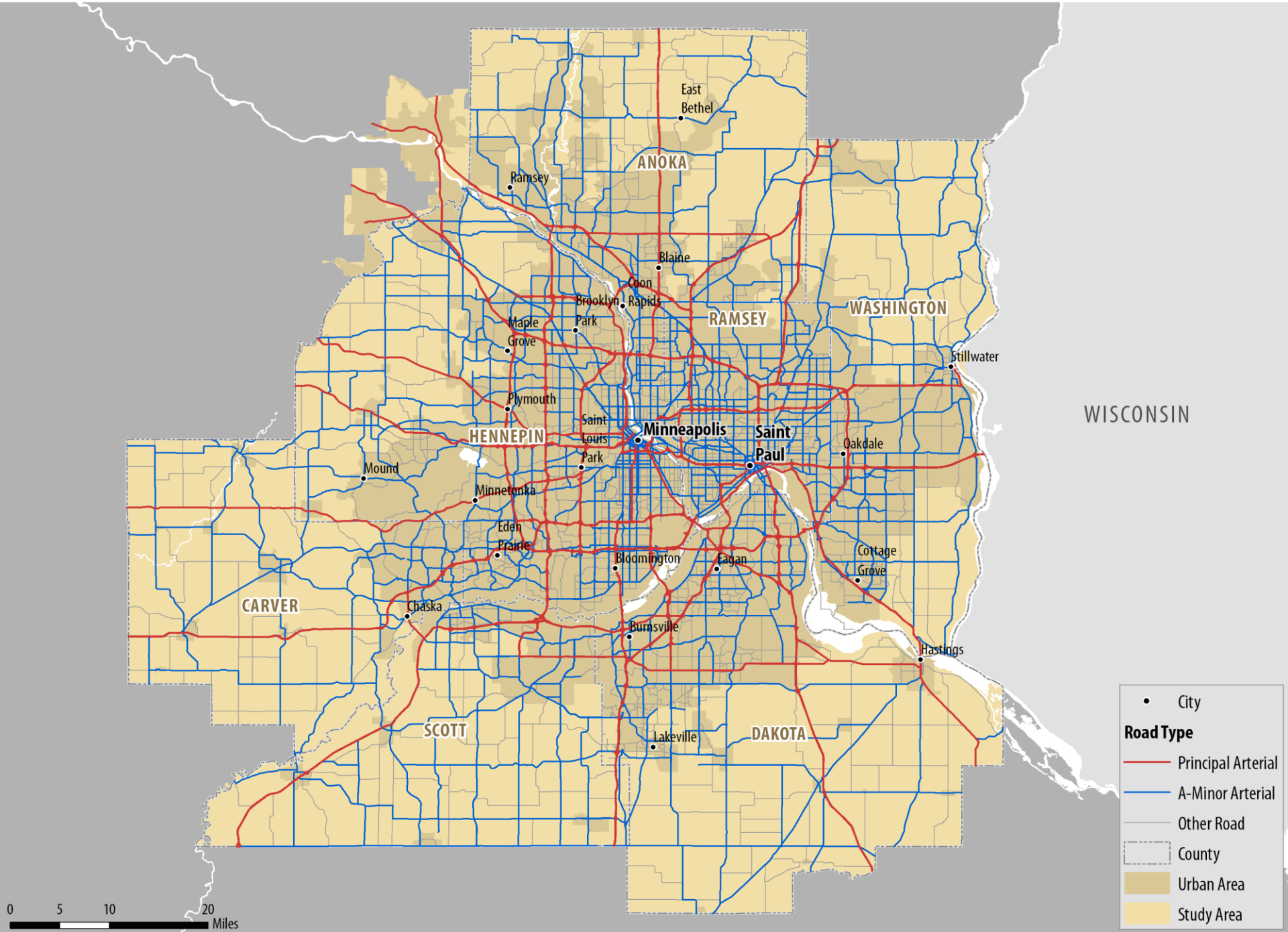
Engage public and private sector stakeholders throughout the study process

Project Background – Technical Advisory Group

- TAG is a small working group committed throughout project duration
- Provides input and direction on key study questions
- Meets four (4) times during project

TAG Membership		
Met Council	Scott County	Bay and Bay Trucking
Anoka County	Washington County	Dedicated Logistics
Carver County	City of Blaine	St. Paul Port Authority
Dakota County	City of Minneapolis	MnDOT Freight Office
Hennepin County	City of Savage	MnDOT Metro District Office
Ramsey County	City of St. Paul	

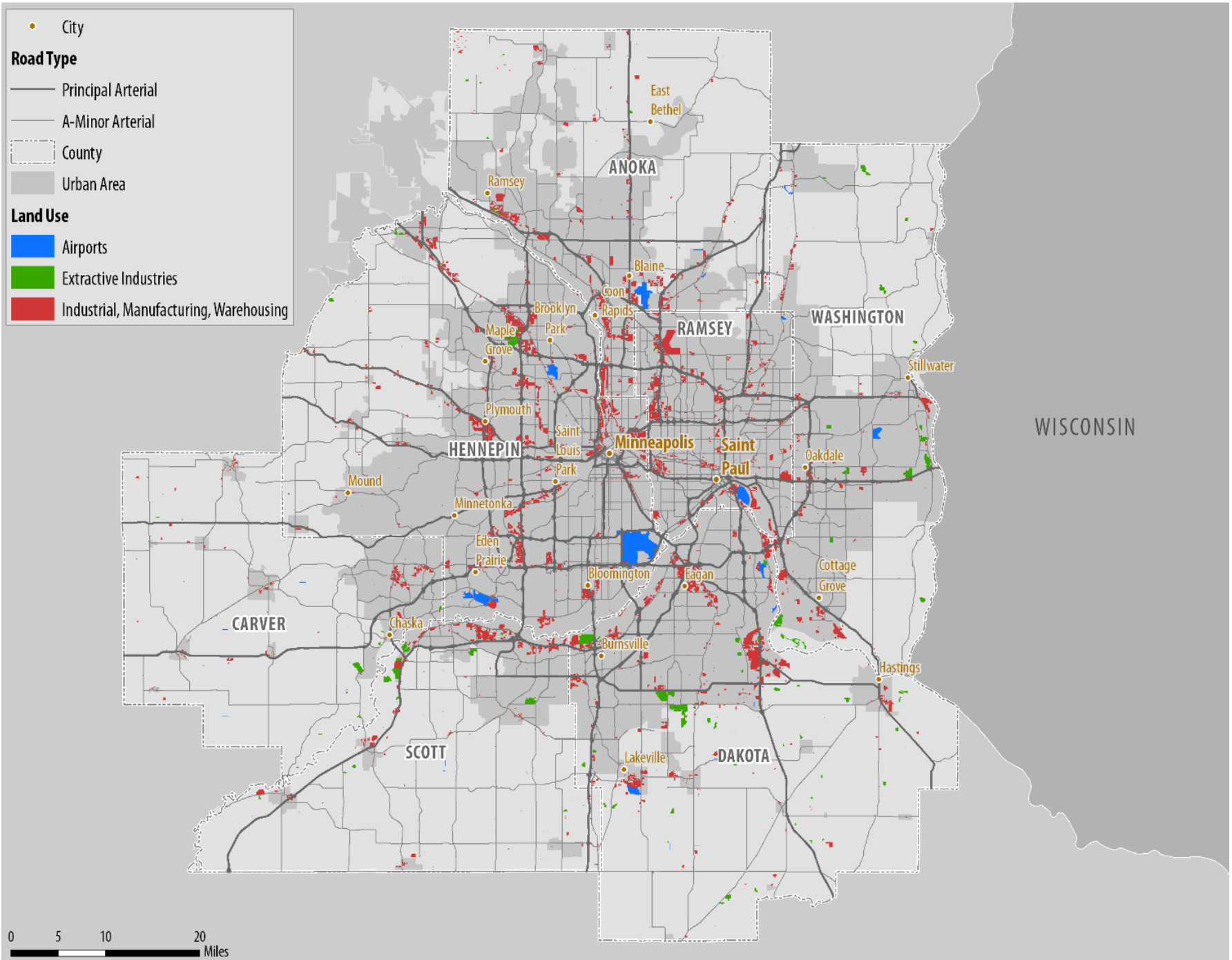
Study Area Road Network



Focus on Freight-Dependent Sectors

Sector Groups	Market Demand	Sourcing and Production	Competition	Role of Transportation
Consumer Goods	Predominantly tied to local consumption	Varied – Local to global	Predominantly for the urban market (end consumers)	Varied, depending on nature of products
Manufacturing	Important focus outside region	Twin Cities, though supply chains extend beyond	• Minnesota • US • Global	• Market access • Supply chain integration
Natural Resources	Important focus outside region, incl. global	• Minnesota • US	Price takers, driven by commodities prices	• Market access • Focus on low cost
Transportation and Logistics	Predominantly tied to Twin Cities freight sectors' needs	Local	Predominantly for the Twin Cities market (shippers)	Service

Freight Generating Land Uses



Project Background

- Shipping behaviors
  - Commodities, frequencies, volumes, destinations
- Most heavily relied upon corridors & connections
- Availability of alternative routes (or lack thereof)
- Corridor issues, including:
  - Major issues such as congested locations
  - Safety, geometric, or other infrastructure

Obtain qualitative information that can be used to impact selection of key truck corridors

Stakeholder*
Manufacturing
3M
Andersen Windows
Medtronic
Natural Resources
Aggregate Industries
Flint Hills Resources
Land O' Lakes
Transportation & Logistics
Bay and Bay Transportation
CHS
Dedicated Logistics
Manning Transfer
Midwest Motor Express
St. Paul Port Authority
Styer Transportation
Other
Midwest Shippers Association

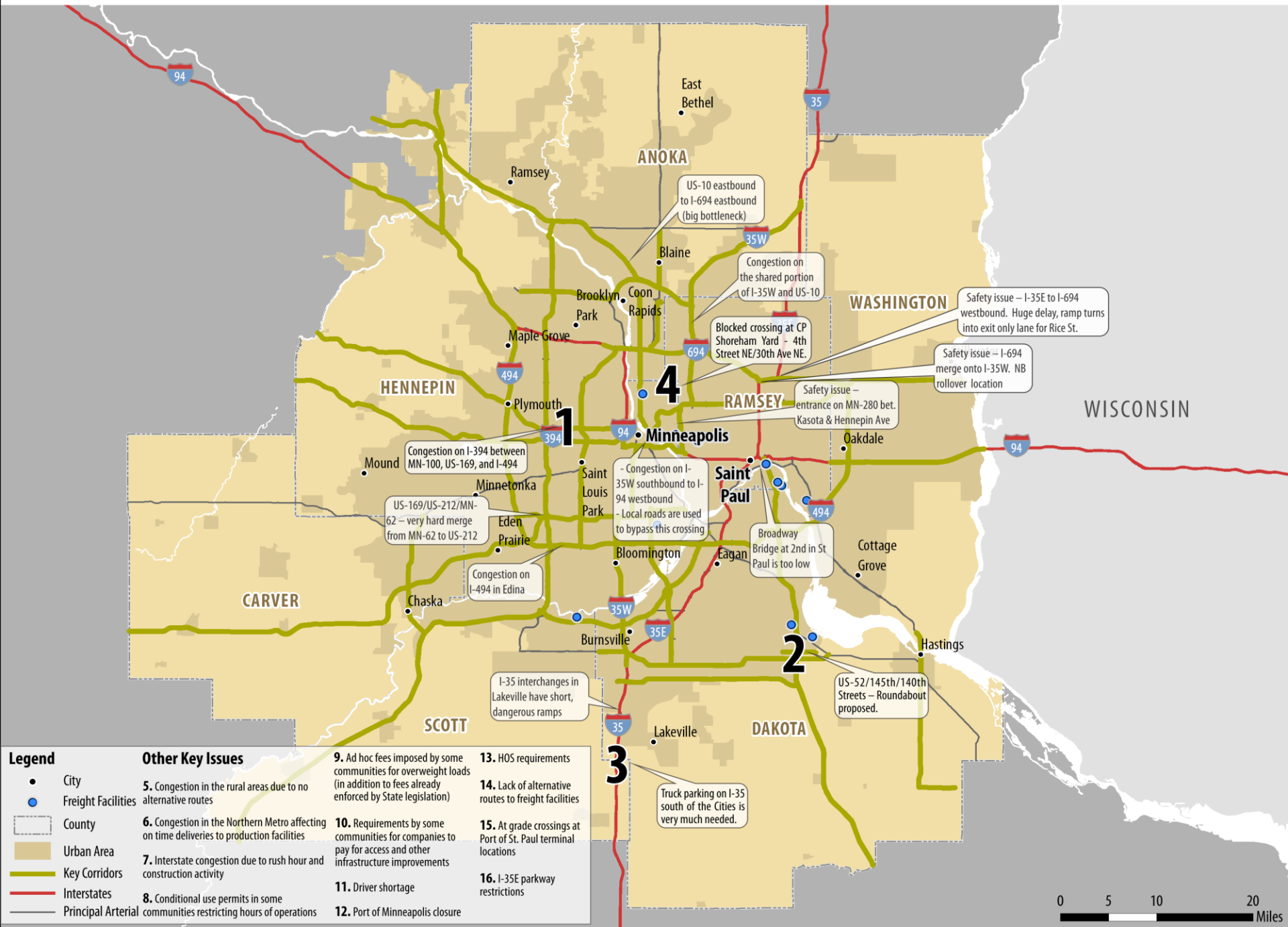
Stakeholder Key Truck Corridors

- Interstate connectivity – *essential*
- First/last-mile connectivity to the region's freight facilities including:
  - Port of St. Paul
  - Port of Savage
  - BNSF and CP intermodal facilities
  - Minneapolis-St. Paul Airport
- State, county and local routes that lead to large freight generators

Truck Corridor Issues

- Congestion
  - On interstates
  - During am/pm peak periods
  - During construction
- Facility Access
  - CP Shoreham Intermodal Yard
  - Lack of alternatives routes in/out of Port of St. Paul
  - Port of Minneapolis
  - US 52 in Rosemount (near 140th/145th Streets)
  - Truck parking

Stakeholder Findings: Key Issues & Corridors



Legend

- City
- Freight Facilities
- County
- Urban Area
- Key Corridors
- Interstates
- Principal Arterial

Other Key Issues

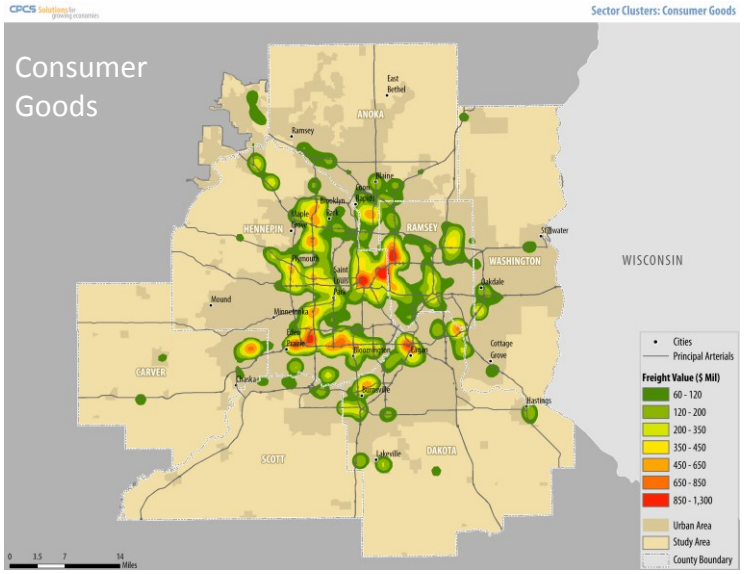
5. Congestion in the rural areas due to no alternative routes
6. Congestion in the Northern Metro affecting on time deliveries to production facilities
7. Interstate congestion due to rush hour and construction activity
8. Conditional use permits in some communities restricting hours of operations
9. Ad hoc fees imposed by some communities for overweight loads (in addition to fees already enforced by State legislation)
10. Requirements by some communities for companies to pay for access and other infrastructure improvements
11. Driver shortage
12. Port of Minneapolis closure
13. HOS requirements
14. Lack of alternative routes to freight facilities
15. At grade crossings at Port of St. Paul terminal locations
16. I-35E parkway restrictions

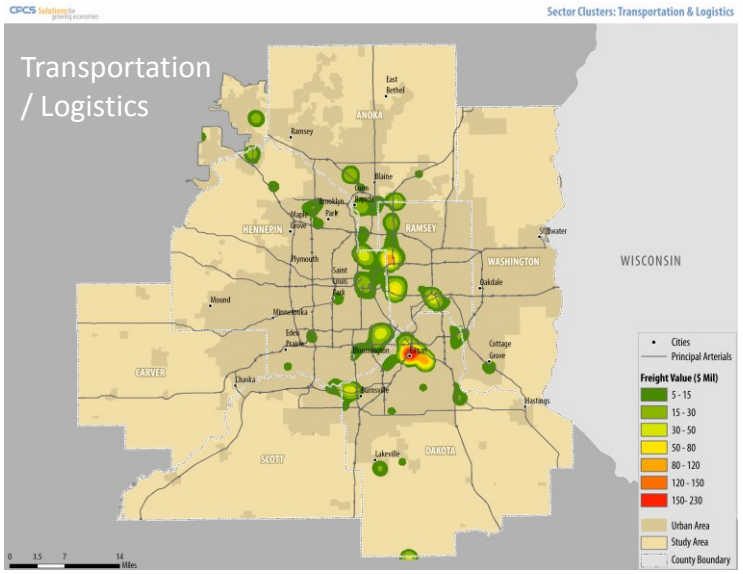
Variables Used in Scoring

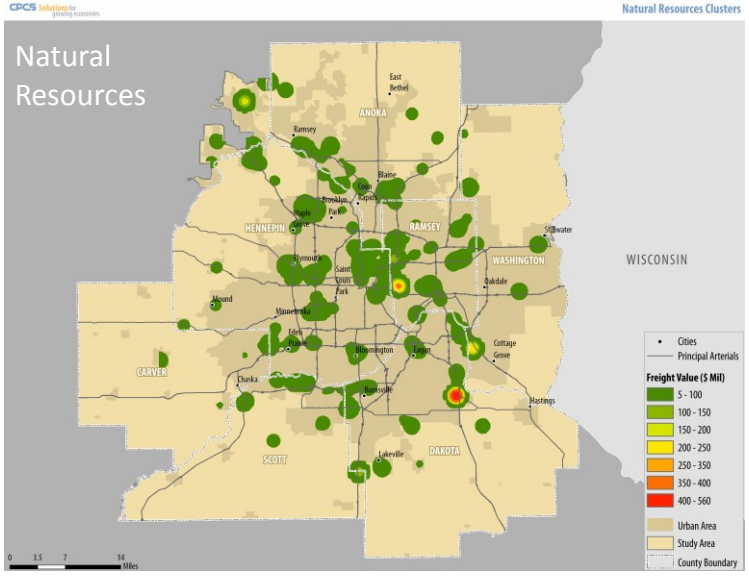
Variables/Considerations	Scoring
HCAADT	Linear function of HCAADT – using MnDOT data where available, otherwise (scaled) ATRI data
Percent Truck	Linear function of % Truck, up to max. 30%
Proximity to Freight Clusters*	Declining as a function of distance
Proximity to Freight Facilities	100 if within 0.5 miles, declining as a function of distance

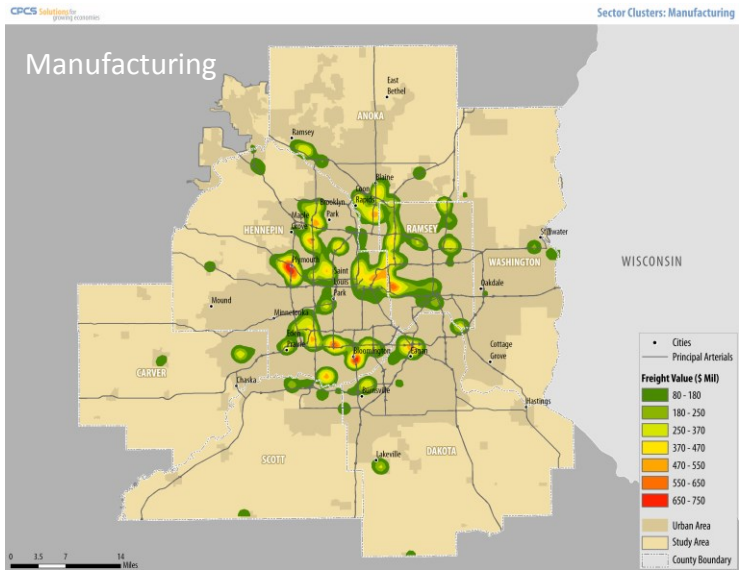
** Freight Clusters identified through analysis of intensity of freight-generating establishments in four sectors. Clusters selected as highest-intensity clusters for each sector and for all sectors collectively.*

Industry Clusters

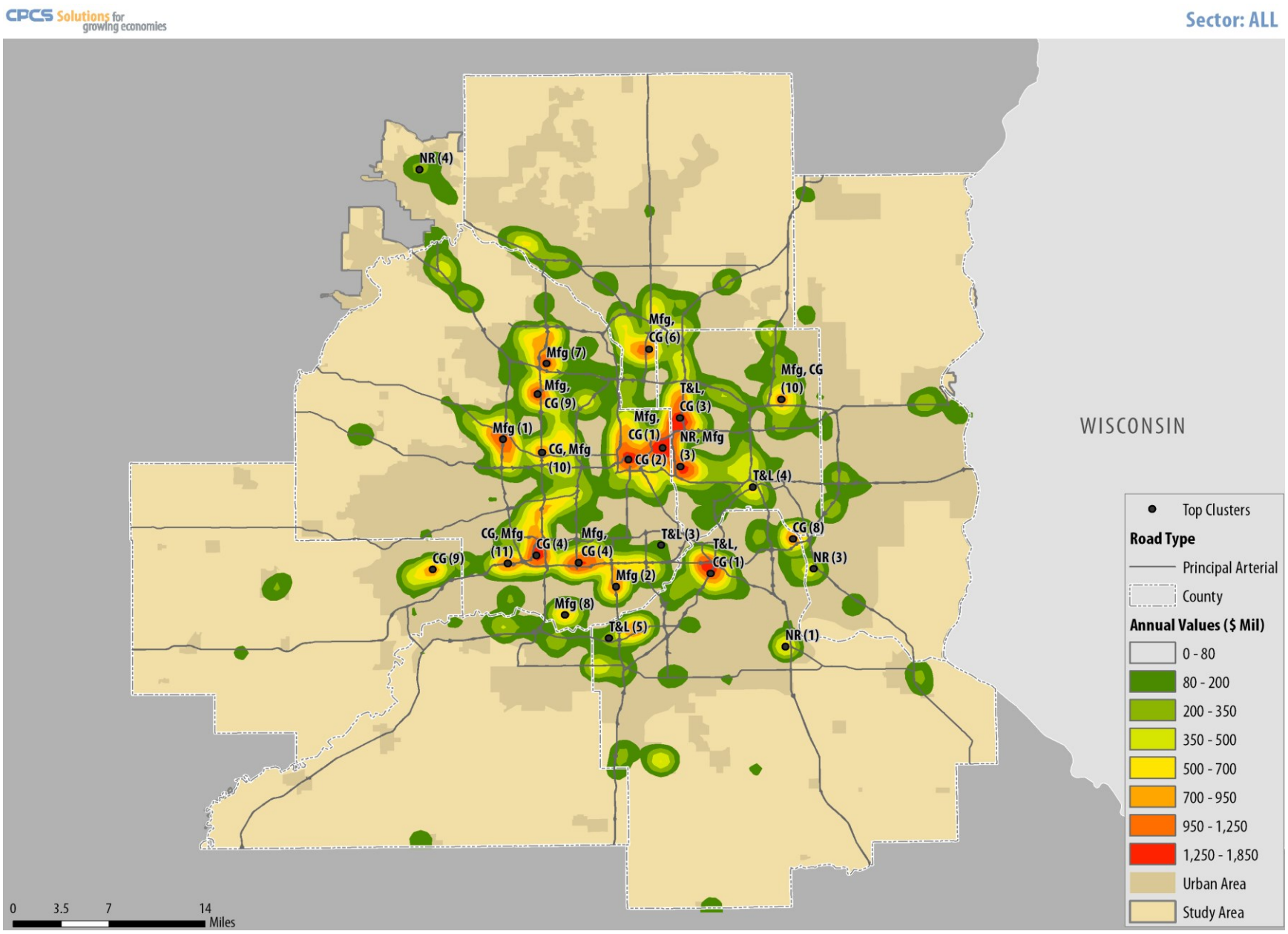




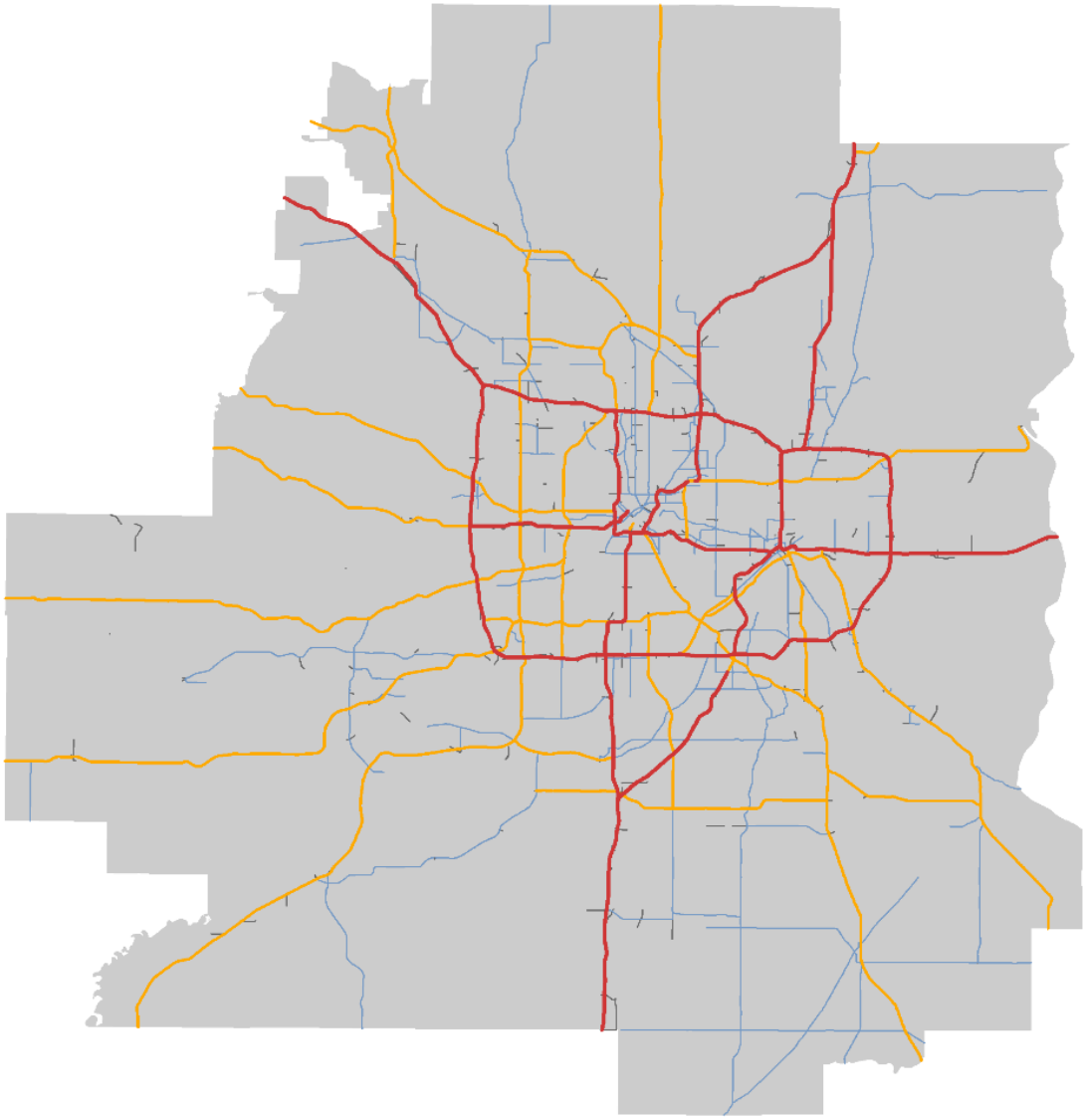




Combined Clusters



Segments Passing Initial Screening



- A road segment "passed" initial screening if it exceeded:

✓ **Truck volume >= 300**

OR

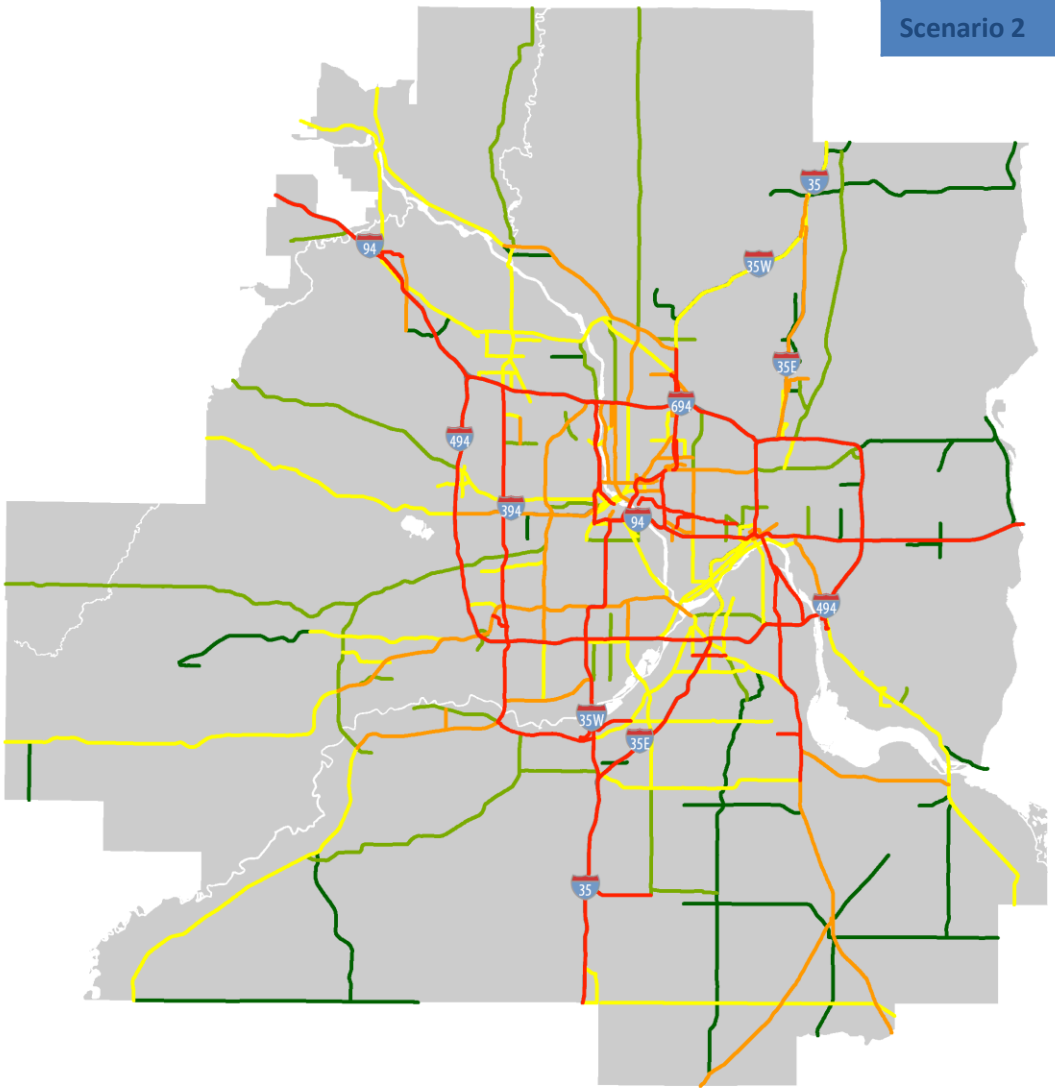
✓ **Truck volume >= 200 and Truck percentage >= 10%**

Screened Corridors

- Interstates
- Other NHS
- A-Minor Arterials
- Access Corridors

Revised Scenario 2 Based on Feedback

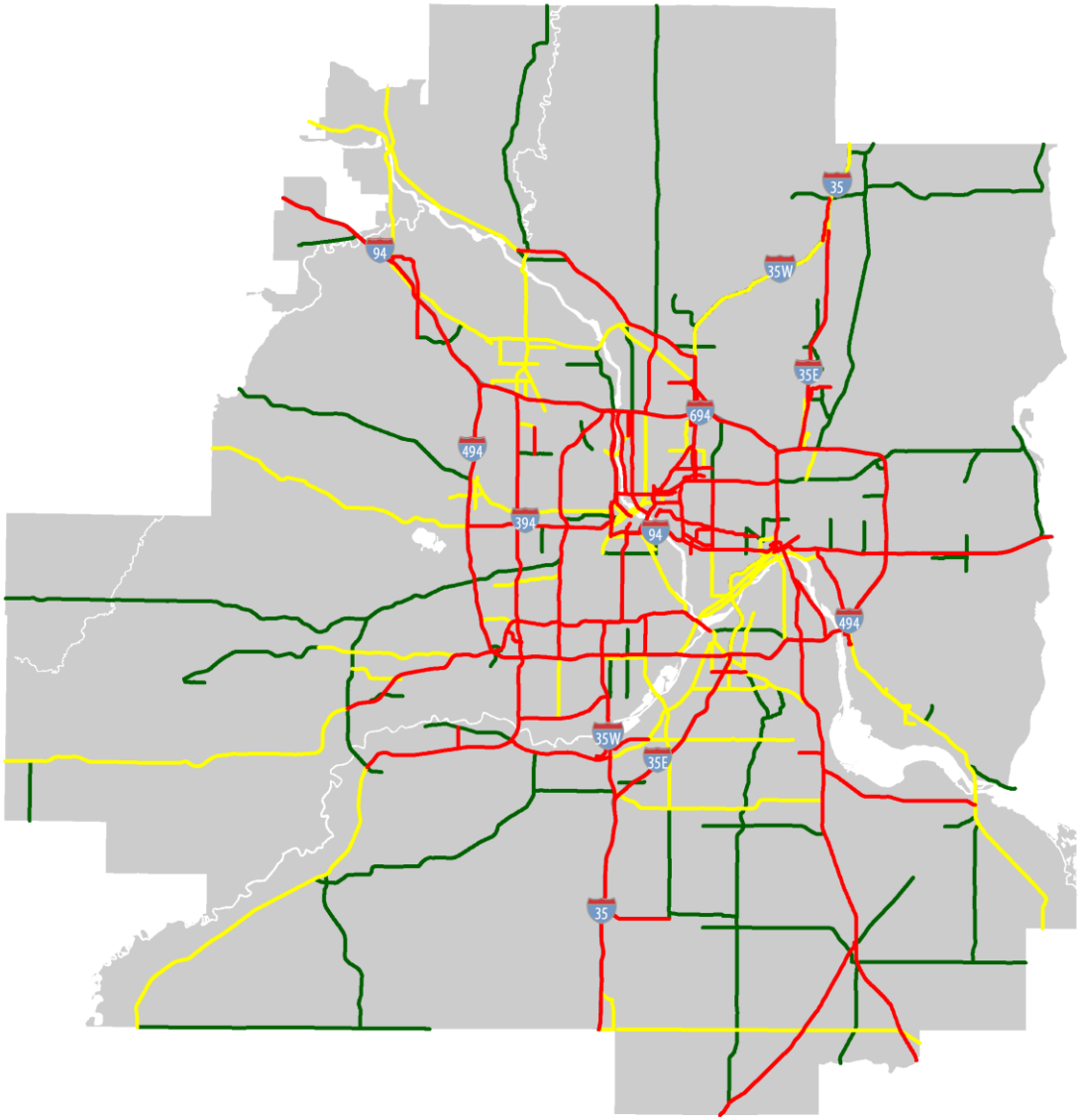
	Volume	Truck Percent	Proximity to Industry Clusters	Proximity to Freight Facilities	Total Score
Scenario 2	60	20	10	10	100



Mileage	Inter-state	Princ. Art.	A-Minor
Dark Green	0	44	226
Light Green	0	51	89
Yellow	39	198	123
Orange	20	94	82
Red	173	44	36
TOTAL	232	430	556

Composite Score
- 5 - 10
- 11 - 15
- 16 - 23
- 24 - 34
- 35 - 78

Getting to a Tiered Approach



Mileage	Inter-state	Princ. Art.	A-Minor
Tier One	193	138	118
Tier Two	39	198	123
Tier Three	0	95	315
TOTAL	232	430	556

Next Steps

- Identification of Tier One corridors for additional analysis
  - Corridors with identified congestion or safety issues
- More in depth, in field analysis for the top 8-12 (depending on length) non-interstate key corridors
- Additional TAG Meeting
- Completion Fall 2016

Key Questions for Stakeholders

- Which corridors are most important to *your* industries?

- What are the issues on those corridors that reduce freight productivity?

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Introduction to CPCS

Global management consulting firm (formerly consulting arm of Canadian Pacific Railway, est. 1969)

- Strategy, economic analysis, policy, specific to transportation and energy sectors
- Multimodal transportation practice (road, rail, air, marine, pipeline)
- Global presence and experience
- Over 1000 projects in more than 90 countries

Recent project experience:

- Arizona State Freight Plan (ongoing)
- Wisconsin State Freight Plan (ongoing)
- Utah DOT Freight Program (ongoing)
- MnDOT Strategic Research Plan (ongoing)
- NCFRP 49 - New Data to Address Urban and Metropolitan Freight Challenges
- NCHRP 08-97 – Multimodal / Multimodal OSOW Corridors
- NCFRP 35 - Multi-modal Freight Transportation Within the Great

CPCS countries of work experience (shaded) and offices

CPCS Solutions for growing economies

Summary of Recent CPCS Experience

Freight Rail

100+ Strategy projects

8 Transactions

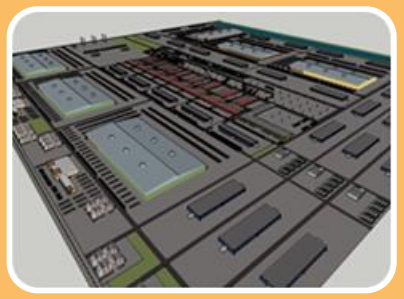
$3+ billion in deals

Port & Terminals

35+ Strategy projects

30+ Transactions

$5+ billion in deals



Multi-modal Transport

30+ Strategy projects

Passenger & Transit

10+ Strategy projects

3 transactions

$3 billion in deals